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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/687,574

10/15/2003

Yoshifumi Arai

YOKOP006

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7590

01/28/2008

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EXAMINER

WASHINGTON, JAMARES

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/687,574

Applicant(s)

ARAI ET AL.

Examiner

Jamares Washington

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 and 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15 is/are rejected.
- 7) ☒ Claim(s) 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 02/28/2007, 07/20/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species VIII, which claims 10-13 are readable, in the reply filed on November 13, 2007 is acknowledged. The traversal is on the ground(s) that claims 14-18 rely on the elected species and thus should be examined in the present application.

The requirement has thus been reconsidered and examiner shall include claims 14-18 to the presently elected claims, 10-13.

Applicant's election of amended Species VIII, which claims 10-18 are now readable, in the reply filed on November 13, 2007 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

4. Claims 10-12, and 14 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of recently allowed application (U.S. 20040263882).

Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Regarding claim 10, applying the step of separately optimizing the ink quantity lattice points and the lower-dimensional color lattice points by separately enhancing the evaluations of said ink quantity lattice point smoothness evaluation function and said lower-dimensional color lattice point smoothness evaluation function would be an obvious variant of that which is described and patented in the abovementioned application wherein the smoothness evaluation function and optimization is only applied to the device-independent color space. Applying the same to the lower-dimensional color lattice points, maintaining either, and readjusting the other

in accordance with the smoothness evaluation function as described for the device-independent color space in the above application is not patentably distinguishable over one another.

Regarding claim 11, minimizing a first movement evaluation function containing a function whose value is increased with increase in the distance between the lattice points after readjustment and said other optimized lattice points is a variation of claim 1 from the aforementioned application wherein using as a variable the lattice point position information in the low-dimensional color space, said function having a function form differing depending on each region in the color gamut to which the lattice point to be evaluated belongs and also containing a constraint condition that the closer the lattice point is to the boundary of the region of the color gamut, the more the evaluated value decreases as the result of its movement.

Regarding claim 12, said limitation on ink quantity is limitation on the maximum quantity of ink adhering to a specific printing area is an obvious variation of saying the amount of each ink used by the printing apparatus as found in claim 1.

Regarding claim 14, said limitation on ink quantity is limitation on the quantity of a specific color ink consumed at a specific gradation value is an obvious variation of the maximum quantity of ink adhering to a specific printing area as claimed in claim 12 above. Therefore, the amount of each ink used by the printing apparatus as found in claim 1 of the pending application would likewise read on this claim limitation.

5. Claims 13 and 15 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. application 20040263882 in view of Said Zandian (US 6081653).

Regarding claim 13, wherein said maximum quantity of ink adhering is calculated by adding up the product of a weighting factor defined for each ink quantity component value and each component value of said ink quantity lattice points.

Ito et al fails to disclose or suggest a weighting factor whose value is "0" or "1".

Zandian, in the same field of endeavor, teaches weighting factors whose values are "0" or "1" ("the "actual" enhancement or brightness of a pel is bi-level, either 0 (dark) or 1 (bright)" at Col. 1 lines 53-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the lattice point determining method wherein the product of weighting factors are added up to determine the maximum quantity of ink at a particular location to utilize the teachings of Zandian wherein weighting factors are given a value of either "0" (dark) or "1" (light) to provide a more continuous tone image.

Regarding claim 15, said limitation on the quantity of a specific color ink consumed is defined by a condition that the product of a weighting factor whose value is "0" or "1" defined for each ink quantity component value and each component value of said ink quantity lattice points is "0" (as rejected in claim 13 above).

Allowable Subject Matter

6. Claims 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuko Fukao (US 7136523 B2) discloses a method to improve color reproducibility by enabling control of a smoothing condition for each of plural positions in a color space.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamares Washington whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jamare Washington
Junior Examiner
Art Unit 2625



JW

January 17, 2008



KING Y. POON
SUPERVISORY PATENT EXAMINER